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## Some Notes of Cases met in Country Practice.*

By J. K. BAXTER, M.R.C.V.S.

My first few remarks will be on the subject of mammitis, or mastitis in cows; a matter of great and I am afraid increasing interest to the country practitioner. This is, in my experience, a most troublesome ailment to deal with, and, in my district at least, appears to be greatly on the increase; this increase may, I believe, be largely traced to the great strain placed on the udder by the demand for increased milk yields per cow, and I shall be greatly interested to hear the opinions of other practitioners on this point. As regards classification of the various forms of this disease, there seems to be great difference of opinion amongst the recognised authorities, and I note that Mr. H. Begg (in Wallis Hoare's "System of Veterinary Medicine") apparently only recognises different varieties of a definitely contagious form. My own opinion agrees rather with that of a writer in the Journal of the American Veterinary Medical Association, April, 1921, Mr. J. F. McKenna, who definitely divides the disease into two classes: (1) sporadic; (2) free infectious or contagious, but to these two classes I would add a third, and very important one, viz., specific; that is to say, tubercular or actinomycotic, or due to any one special or definite disease-producing organism. My remarks to-day concern principally the first two classes. The sporadic form appears to be almost always due to some external influence on the udder, such as extreme heat or cold (more especially the latter), bruising, and of course, traumatism. I believe intestinal disturbances such as constipation or sudden changes of food are also blamed, but I cannot remember ever having seen a case which could be assigned to this cause; although constipation due to pain and high fever is a very frequent complication. This sporadic form does not appear to be very, if at all, contagious, when one sees the conditions under which milk is produced in many sheds; a cow with mastitis in one or more quarters being indiscriminately mixed up with healthy cows and the milkers taking no trouble whatever to cleanse or disinfect their hands after handling and stripping out an affected quarter before passing to a healthy one, and also, in nine cases out of ten, milking direct on to the floor of the cowshed, whence of course the discharge is spread in all directions on the soles of the boots, bottoms of buckets, legs of milking stools, etc., with apparently very little result so far as spreading the disease is concerned.

* Presented to the Royal Counties V.M.A.

The onset of this form does not appear to be very sudden, although from what one usually meets in practice, one might almost jump to the conclusion that it was quite sudden; at first the patient appears somewhat dull and listless, and does not feed up quite so readily as usual, also there will be a slight shrinkage in the quantity of milk, which, if very carefully examined, may show a very few minute flocculi. If the temperature is taken at this stage, it will be found to be somewhat high, round about 103—104. These slight signs are of course quite enough for the expert, but are often overlooked by the ordinary cowman; consequently one is only called in to attend the case after the cow has practically ceased feeding and the udder is so much affected as to be extremely hard and painful to the touch, with complete alteration in the character of the milk, which has usually become very thin in consistency and very much resembles blood serum in appearance, except to the nose—as the odour is most offensive and penetrating. Even this thin fluid is very difficult to obtain, because the teat has become so swollen and indurated as almost to resemble hard rubber to the touch. From this stage the progress of the disease is rapid, and the practitioner who knows of any remedy or system of treatment which will check its course with any certainty is indeed a lucky man. As a further symptom one gets the character of the secretion gradually altering from straw-coloured, almost clear, fluid to claret colour, mixed with varying amounts of pus, and it is this thick pus which in the worst cases occludes the teat duct rendering any relief of the affected quarter through this channel impossible and leading up to gangrene; in this stage the udder becomes cold to the touch and changes to a blue-black colour, when, if the quarter is not incised and the patient survives, it eventually sloughs out entirely.

*Treatment.*—Personally, I have tried many remedies, internal and external, but have not yet succeeded in finding any one that can be depended on with any degree of certainty. If one is lucky enough to get a case in the first stage, then I think a brisk purgative, followed by febrifuges and stimulants internally, and hot fomentations, assisted by hand rubbing, externally cannot be beaten. As a purgative, I formerly depended almost entirely on sulphate of soda, but since hearing a paper by Mr. A. S. Adams, of Dursley (read before the Mid-West Society in January of this year), I have added aloes in ℥ii. doses to this with very beneficial results; if this is not effectual in twelve hours, I have no hesitation in giving barium chloride in ℥ii. doses in a quart of warm water; this

usually acts quickly, and I have never seen any ill results. My febrifuge and stimulating mixture is fluid extract of aconite and liquor ammon. acet., both in full doses, every four hours in warm water, and although I have tried many other drugs, I have found nothing so effectual as this, even in fairly advanced cases. I see there is a note on formaldehyde in the November *Journal*, and I must say my experience with this drug has been somewhat similar to Mr. Pugh's—practically nil; although in other cases (notably septic metritis) my results have been good. I have tried nuclein and various bacterins and vaccines in these cases, but cannot say that I have had any appreciable results, although this seems to my mind the most rational line of treatment. In the November *North American Veterinarian* I see there is a notice of an ether vapourising outfit, for the use of ether under pressure in this disease, which certainly sounds worth a trial, and I should like to know if any member can give any information on this. I note that Mr. McKenna, in the article previously quoted, strongly advocates the use of a drug called echinacea, but I have no knowledge of this drug, and the only note I can find concerning it is in Messrs. Parke, Davis' *Materia Medica*, where it is recommended as an alterative in septic infections. Perhaps some other member could enlighten us on this also. Externally hot water fomentations and frequent stripping of the affected quarter should be persisted in, and after fomentation the quarter should be thoroughly dried and well rubbed and massaged with some bland preparation—camphorated oil is my favourite. If, in spite of treatment, the case progresses to occlusion of the teat, the quarter should be deeply incised in three or four places at the base of the teat to give an outlet to all secretions and pus. There should be no hesitation in doing this, as, when the case has progressed so far, the quarter is irrevocably lost as a milk-producing organ, and I have never seen any but the greatest benefit accrue from it as far as the patient is concerned. Tuberculous mammitis is, of course, not treatable. Actinomycotic mammitis I have never, to my knowledge, met, but I should imagine it would be amenable to the ordinary iodide and vaccine treatment as used for wooden tongue.

Leaving the subject of mammitis, I should like to make a few remarks on the use and abuse of epsom salts, especially in cattle practice. This is undoubtedly a much overrated purgative, and personally I much prefer sodium sulphate, and practically always use it. I see that Milk's *Pharmacology and Therapeutics* says, "Magnesium sulphate is toxic in very concentrated solutions," and Finlay Dun says "it is given in 10—15 parts of water," which works out that 1 lb. should be given in 8—12 pints, whereas a common dose for a stockman to give is 1 lb. in about 2 pints, and further this somewhat concentrated dose is often given to a small beast and repeated two or three times at short intervals, with the result that one often sees the symptoms of poisoning given by Milks, namely, "marked depression of the respiration, together with a curare-like action on the motor end plates in striated muscle." The marked depression is patent to the naked eye, and the curare action manifests itself in stiffness, often approaching paralysis; there is almost complete absence of peristalsis, together with dribbling, without apparent effort, of watery filth from the anus, which trickles down a semi-paralysed tail, saturating it and generally heightening the picture of depression, which is often further manifested by a sullen grunt at each expiration; also the eyes are generally sunken, with a good deal of pale, almost white, membrana nictitans in evidence. Perhaps my district is unlucky in possessing more than its share of red drench, yellow drench and plain salts fanatics, but I frequently see the above picture, and believe my diagnosis of mag. sulph. poisoning is correct. The great redeeming feature of these cases is that, although appearing pretty hopeless to the untrained eye, they usually respond well to suitable treatment and one gains a certain amount of undeserved *kudos*, which, of course, is promptly counterbalanced by the loss of a case which appears to the owner to be quite simple. These cases respond quite quickly to a hypodermic of strychnine (1 grain), followed up by full doses of nux vomica, gentian and stimulants given every four hours in water. One remark I should like to make here is that the vast majority of drugs appear to act better when given in water, and I am no great believer in drenching with gruels and milk, which appear to me to hinder their action. Also one further note concerning strychnine: Finlay Dun gives the hypodermic dose for cattle as up to grs. v., and for horses, grs. iiss., whereas my humble experience has been that cattle are far less tolerant of this drug (hypodermically) than horses, and I have quite frequently seen twitchings produced by three repeated 1 grain doses; still it is undoubtedly one of the most dependable drugs we have as a tonic and nerve stimulant, and I almost invariably use it in conjunction with the ordinary medicinal treatments in colic and milk fever with great benefit; in fact, I find that in some cases of milk fever that are seen early before they have got past the trampling stage, inflation is quite unnecessary, as they recover quite well under the strychnine injection alone. Early in this miscellany I mentioned the drug formalin as being successfully used in metritis, and I should like to say a few words on this, and also its use in scour of young stock. Concerning metritis, I had among the ordinary run of foaling cases this spring the usual percentage of bad deliveries, accomplished under very insanitary conditions, and have one breach presentation particularly in mind at the moment. The mare had been in labour some hours when I arrived on the scene about 10-30 p.m., to find the patient bathed in sweat, and with only the foal's tail in evidence. The case looked pretty hopeless, especially as two or three amateurs had had a go previously, with no results beyond adding to the mare's discomfort. However, she was very plucky, and we had the dead foal delivered in about half an hour, and the patient, of course, pretty well done up. Gave my favourite pick-me-up strychnine hypodermically,

and left her alone for about half an hour, while clearing up, cleaning myself, &c.; then gave formalin ℥ss. in a pint and a half of water, inserted a vetiod pessary, and well smeared the genitals with the same substance, and left her till next morning, when I saw her about 9-30. Found her looking fairly bright, had eaten a small bran mash and drunk a fair quantity of water; temperature 102. I repeated the dose of formalin, combined with fluid extracts of nux vomica and gentian, also repeated the vetiod treatment, and left a formalin dose for the same evening. I saw her again next day looking quite bright and feeding well; repeated treatment and left sufficient doses for the following day, after which I saw her once again and found her practically normal, except for a slight drag in one hind leg. This case was fairly typical of several which, in my opinion, would otherwise undoubtedly have become badly septic, and very probably have died, and I am anxiously looking forward to a further trial of this treatment during the coming season. One point I think should be specially emphasised, and that is commencing to dose with the formalin as early as possible, before the septic organisms have had time to become firmly established; also (though as a rule I heartily dislike cracking up proprietary articles), I must say that I have found vetiod most efficacious in allaying inflammation and generally clearing up any septic inflamed areas, at the same time apparently allaying irritation. In scour in calves I have several times used formalin in ℥i. doses, repeated every six hours, with marked benefit, and have lately almost given up the use of other drugs in favour of this.

Before concluding these remarks I should like to say a few words about what to me is a new experience in cattle diseases, although I have had twenty years in the same practice, and thought I knew the local conditions. This is a non-infectious eczema of the extremities, much resembling mud fever in the horse, except that it is more acute. It affects cattle of all ages, and appears to have no connection with condition or feeding, and what is rather extraordinary to me is that the darker coloured cattle (especially rich dark reds) seem to be most badly affected, whereas the rule in most skin diseases apparently is for the lighter colours to suffer most. It afflicts mostly the *fore* legs, and does not usually extend much above the knees, being usually worse between the knee and fetlock. Commencing as a slight swelling there is very soon a gummy serous discharge, which, in untreated cases, mats the hair, eventually falling off in large dry scabs, leaving an open raw surface, which heals very slowly; also in the worst cases one gets a chain of small abscesses up the lymphatics, above the shoulder; but this, I take it, is a secondary infection. There is no fever, and apparently very little irritation, but although the appetite has continued good in all cases, there is always great loss of condition. I have failed to find a published account of any exactly similar condition, but perhaps one of the members present can give me some light on the subject.

### Discussion.

The President said the Association was very much obliged to Mr. Baxter for an interesting paper, containing plenty of material for discussion.

Mr. Coleman thanked Mr. Baxter for his very instructive paper, which was *multum in parvo* without doubt. The remarks respecting mammitis were especially interesting to him, as he had had rather an interesting experience since the beginning of the year, and had come to the conclusion that most of the cases he had met were not sporadic, but more or less specific. He had found *streptococci*, *staphylococci*, *bacillus enteridus* and *bacillus coli*, not in all, but those bacilli had been one to three or all of them in every sample. In one particular outbreak there was rather a peculiar coincidence. There was case after case, in a large herd of Friesians, of a white discharge from the vagina, and upon examination the vagina membrane was found to be ulcerated. He treated it simply as an ordinary common case of vaginitis for some considerable time. A number recovered and a number did not. He then took some of the discharge and had an autogenous vaccine made, with which he inoculated the cows five times, and they all recovered, after they had been suffering from the disease for over two years. The coincidence was that a large number of these cows, after calving, appeared with mammitis, and the secretion obtained from the udder contained the same organisms as the discharge from the vagina had done. He adopted the same treatment of using autogenous vaccine made from the discharge, and again brought about a cure; but, strange to say, before it appeared in the cows there were a large number, 15 or 20, beasts which had never been to the bull, ranging in ages from 6 to 15 months, showing mammitis. He obtained from those infected quarters material from which he again had an autogenous vaccine made, and not only inoculated the 5 or 6 actually affected, but the whole bunch of 25 or 30. Those which were affected were a long time recovering, but did not get any worse, and those which were not affected did not become so after inoculation. In those that were very badly infected he injected the udders with a solution of proflavin, citrate soda and hydrogen peroxide with wonderful results. He left it in the udder for about a quarter of an hour and then milked it out, repeating the injection and milking two days later, and the inflammation subsided. The milk did not come again in those quarters. He used 2½ grains of proflavin to 10 ounces of water and one ounce of hydrogen peroxide and a tabloid of soda cit., using it just tepid. Mr. Baxter had said that he had no results from vaccine, and he should like to ask him whether he used proprietary vaccine or had a vaccine prepared from the individual case. He himself believed from experience that unless the vaccine was prepared from the individual case it was very often useless. In some of the cases, perhaps, there were *streptococci* and *staphylococci*, and in another case, perhaps, there might be *staphylococci* and *bacillus coli* and *bacillus enteridus*, and in another case simply the *streptococcus*. Unless the vaccine was prepared from the individual case, he feared that one of those organisms might be overlooked. Mr. Baxter had also referred to lacerating the udder. He himself always preferred to remove the quarter, and he had never had it attended with any bad results. It was rather difficult to reach the arteries to tie them, but if a hose pipe was near by and used so as to douse with plenty of cold water, it would generally be found that it stopped any hæmorrhage. He had excised the whole of the udders in many cows, and he had never had any bad results afterwards. If they were left to slough out, it took months, and was a very dirty job, and the cow became very poor, and nine times out of ten the owner preferred to slaughter.

Mr. Slocock also congratulated Mr. Baxter on the excellence of the remarks he had made on subjects of very great interest to veterinary surgeons. With regard to mammitis, no doubt every member had had experience which was not always very satisfactory. He certainly believed in fomentation for giving relief. It was a very

good old practice amongst many cow-keepers, when they came to the period of drying off the udder, to use yellow hard soap and lather well with a good deal of massage, rubbing the lather in until it became more or less dry. It made a good application, and should be done daily at the end of each fomentation, and it had more or less of a stimulating effect. Soft soap should not be used, as it was too much of an irritant. What had been said in connection with the use of mag. sulphate was very interesting. He had never seen it used to that extent in the symptoms which Mr. Baxter had described. He was interested also in the strychnine. He had always found that if some liquor strychninæ with mag. sulph. was given, there was a better clearing up afterwards. He thought strychnine and mag. sulph. combined made quite a good aperient. The purgation was sharp and soon over, and it was a good stimulant. He had not seen the disease characterised as eczema of the legs, but he had seen beasts which had come up from the western country with something he had always considered more or less as a mud fever.

Mr. KENNEDY said he had never had any experience of stopping hæmorrhage with the simple application of a hose; in fact, his experience had been quite the other way about, because he had had difficulty both with cows and dogs. He was surprised that a cold water application would stop hæmorrhage after removing the udder, and he should try it.

Mr. HANCOCK said that as a country practitioner he had enjoyed the paper very much indeed. There was very little he could suggest in the way of treatment, but with regard to Mr. Coleman's remarks he could say he also had pedigree herds under his control, and many cases of mammitis assumed a form that took a lot of fighting. He was not referring to the ordinary simple case of a cold in the udder after calving, but cases which very frequently were due to neglect on the part of the person in charge in drying them off, and mammitis developed either before they had calved or immediately afterwards. In ordinary cases of cold, ordinary means of treatment were generally followed by beneficial results, but, with regard to the other type of mammitis, once he was satisfied that there was pus formation, he adopted quite a different line of treatment. Having satisfied himself that there was pus in either one or more quarters, he injected potassium iodide in the old-fashioned way into the quarters, and waited 48 hours, and then proceeded to inject, at intervals of three or four days, a preparation that was made by Parke, Davis and Co., and had had very beneficial results from it. It was a *streptococci* and *staphylococci* vaccine. He did not advocate hot water treatment, but did advocate cold, but not a great deal of that. Instead of using anything in the shape of a counter-irritant, he advocated the use of belladonna ointment smeared on twice a day, after fomenting with cold water.

Mr. J. WILLETT said he knew very little about the matters under discussion, but had been very interested to hear Mr. Baxter advocate barium chloride. He had used it as a laxative for a good many years, and much preferred it to anything in the pharmacopœia in horse practice. He was also interested in the use of formalin; he thought that formalin was a drug far too little used now in general practice.

The PRESIDENT said he was extremely sorry there was not a better attendance and a better discussion, because it was a subject which provided matter for discussion, and it was always good to hear the different treatments put forward. Although he had not tried it, he thought probably the vaccine treatment, if it was followed up, would prove very useful. He had had a personal experience in connection with autogenous vaccines. Some little time ago he set up a septic arm, a septic rash being more or less all over one side of his body, and after some weeks his medical attendant suggested a vaccine. He told the doctor that unless it was an autogenous vaccine he would not have a vaccine used. An autogenous vaccine was made, and he had six inoculations with it, and it certainly cleared up the rash, but from that day to the present he had had, at certain times, perhaps for a few hours, little heads come up discharging serum. He went to the medical man again, who thought there were probably other bacteria that the vaccine did not affect. He had had no more injections. The doctor had asked him to try collodion and arsenite of soda. He had been taking arsenite of soda and painting the places with collodion, and that seemed to have had the desired effect, although the little heads did recur. He thought the vaccine treatment, if followed up, might give better results than had been gained up to the present.

Mr. KENNEDY said he had been trying codrenine and eucain as a styptic and sedative without any results at all. It was a preparation made by Messrs. Parke, Davis. He had tried it in several cases of dogs and in one case of a horse, but without result.

The PRESIDENT asked whether that was called locasthetic.

Mr. KENNEDY said it was called a local anæsthetic.

The PRESIDENT thought that if what was called locasthetic was used very good results would be obtained. It was given to him by Mr. Sewell, who used it very largely, and he had not been disappointed with it.

Major SIMPSON said he had been out of practice for some time now and would not enter into a discussion on mammitis, and so on, but on the question of vaccines he was rather tempted to relate his own experience. A relative of his had been undergoing various vaccines for a long time, and had been to about four Harley Street specialists and other people, and they had not been able to give the disease a name. For nearly eighteen months the patient had had different vaccines pumped in, with absolutely negative results. Since then she had gone to three or four other specialists. It seemed to be a growing idea amongst the medical profession that the vaccine theory could be carried to excess; that there was not so much in it as was thought a few years ago, when it was first brought out. It was, undoubtedly, very largely losing ground with the medical profession. Mr. Coleman had been emphatic in his advocacy of vaccine, but one needed to look on vaccine with a certain amount of suspicion, and not be too much wrapt up in it and think it was going to do everything. With regard to Mr. Kennedy's remarks, he could remember in the old days the use of codrenine and eucain was a god-send in his own practice. By injecting a few drops round the dew-claws, one was enabled to take the claws out without muzzling the dog, the dog knowing very little about it, and there was no hæmorrhage.

He had to thank Mr. Baxter very much indeed for coming forward and helping the Association, because there was at that time no paper for the present meeting. Mr. Baxter, when approached, said he would do his best, and it had been a very good best indeed. He sympathised with him that there were not more people present, and that there had not been a better discussion. Had things been different, he should certainly have moved that the paper be printed and circulated for further discussion at the next meeting, as it was on a subject which must appeal to a society composed so largely of country practitioners, but he dared not propose that course now, because the expense of printing was so great. It was not as a rule the custom to have papers read at the annual meeting, but it might be possible to adjourn the discussion to that meeting, when further discussion could take place. If Mr. Baxter was willing, he would move that the further discussion of the subject be postponed until the next meeting in January.

Mr. BAXTER said he quite agreed.

Professor REYNOLDS seconded the motion, which was unanimously carried.

Mr. BAXTER thanked the members for their kind remarks, and said he would reply to the discussion at the next meeting, after it was finished.

## Veterinary Education in France.

Veterinary education in France is national. There are three national veterinary colleges—Alfort, founded in 1765; Lyons, founded in 1761; and Toulouse, founded in 1825. The first one is located in a suburb of Paris and the others in the cities their names indicate. Aspirants for admission apply to the Minister of Agriculture and submit with the application their legal, moral and educational credentials. Admission is by competitive examinations held at different geographical centres of the country on the same day. The number of successful applicants the colleges are permitted to admit is determined by the Minister of Agriculture and is based on the civil and military needs of the nation. Applicant must be a citizen of France, between 17 and 20 years of age, and must hold the "baccalaureat" of the French educational system. (So far as it is possible to make parallel comparisons, this is equal to two years of college work in American universities.) Certificates of health, moral character and smallpox vaccination must accompany the application. Graduates of the National Agricultural College who have the baccalaureate degree are admitted without examination. Aliens are admitted by permission of the Minister of Agriculture under the same regulations as French citizens, but on completion of the course receive a certificate of qualification in lieu of the diploma. The competitive examination is both written and oral, and is a test of the applicant's knowledge of composition, physics, chemistry and biology, including zoology, botany and paleontology.

The college course is four years of ten months each, exclusive of examinations. In making comparisons of these schools with ours (says the American Author), the most striking difference found is the qualification of the teaching staff. Each professor is a master of the subject he teaches, an authority of world-wide reputation. He is so well known to readers of books and current literature that one feels acquainted with him before the introduction. He obtains his position by gradual steps and through competitive tests. He is first a tutor, then a chef de travaux (assistant professor), before reaching the distinguished rank of professor. The organisation of the teaching staff is unique. The school is divided into ten departments called chairs, each one directed by a professor, who is supplied with an assistant professor and tutors as required. The branches of the curriculum are so divided among the ten chairs as to give each of them the same relative importance. The ten professors constitute the Council, one of them acting as Director. Each of the three schools have precisely the same organisation and are supervised by the Inspector of Veterinary Schools, who is advisor of the Minister of Agriculture on matters of veterinary education.

The schedules are prepared each year by the Councils and must be approved by the Minister. When thus approved they are publicly posted in the college departments as the official work of the year. Deviation from the schedule is prohibited. Lectures not thus prescribed cannot be given except on permission from the Council.

SCHEDULE.

*First year.*—Medical physics, medical chemistry, pharmacology, pharmacy, toxicology, medical and forage botany, anatomy (first part), histology, embryology, physiology (first part), hippo-mechanics and horse judging.

*Second year.*—Zoology, pathology of parasitic diseases, anatomy (second part), general therapeutics, materia medica, semeiology, elementary pathology and hygiene.

*Third year.*—Pathological anatomy, technique of autopsies, legal medicine, medical pathology (first part), surgical pathology (first part), clinics, surgical anatomy, operative surgery, shoeing, bovine, ovine, caprine, porcine and avian pathology, special operative surgery, clinics, obstetrics, general pathology and microbiology.

*Fourth year.*—Food inspection, inspection of establishments under veterinary control, medical pathology and clinics (second part), veterinary jurisprudence, surgical pathology (second part), bovine, ovine, porcine, caprine and avian pathology (second part), microbian diseases and sanitary police, and zootechnics.

SCHEDULE BY CHAIRS.

*First chair.*—Medical physics, 15 hours; medical and pharmaceutical chemistry, pharmacy and toxicology, 60 hours.

*Second chair.*—Medical and forage botany, 22 hours; medical zoology, pathology of parasitic diseases, 50 hours; clinical lectures, 15 hours.

*Third chair.*—Anatomy, first part, 30 hours; anatomy, second part, 30 hours; histology and embryology, 25 hours; teratology, 5 hours.

*Fourth chair.*—Physiology, first part, 15 hours; physiology, second part, 40 hours; general therapeutics and materia medica, 30 hours.

*Fifth chair.*—Pathological anatomy, 40 hours; legal medicine, 5 hours; food inspection and inspection of establishments under veterinary control, 30 hours.

*Sixth chair.*—Medical pathology, first part, 20 hours; medical pathology, second part, 20 hours; clinical lectures, 30 hours; semeiology and elementary pathology, 15 hours; veterinary jurisprudence, 15 hours.

*Seventh chair.*—Surgical pathology, first part, 25 hours; surgical anatomy, second part, 25 hours; clinical lectures, 30 hours.

*Eighth chair.*—Bovine pathology and bovine operative surgery, first part, 20 hours; bovine pathology and operative surgery, second part, 20 hours; obstetrics, 27 hours; avian pathology, 5 hours; clinical lectures, 20 hours.

*Ninth chair.*—General pathology and microbiology, 25 hours; microbian diseases and sanitary police, 50 hours; clinical lectures, 20 hours.

*Tenth chair.*—Hippo-mechanics and exterior of the horse, 15 hours; hygiene, 25 hours; zootechnics, 55 hours.

Total hours (not including clinical lectures), 780.

The work of each professor is so arranged as to cover a definite proportion of the whole at each lecture, or lesson, as they are called. The feature of the teaching at Alfort that impressed me most is the great pains taken in preparing each lesson for presentation to the students. A lecture is not a perfunctory affair. It is a definite amount of the curriculum presented with great attention to detail and in a way to leave a profound and lasting impression on the mind. Its outlines are carefully written out on great blackboards which cover the entire front of the room, and the professor's table is arrayed with all manner of illustrative specimens, some from the large museum and others freshly prepared and showing that a great

deal of time and pains were taken in making them. These blackboard outlines and specimens are left in view of the students sometimes for several days, to enable them better to complete their study and to tabulate properly their notes.

Each chair has its own buildings and equipment, including laboratories and such laboratory paraphernalia as the group of branches it covers requires. In fact, Alfort is constituted of ten separate colleges, one for each chair. They are so distinctly separated from one another that a visitor of one might remain entirely unconscious that there were nine others in the immediate surroundings, each working diligently with its own speciality.

Alfort has ample stabling and profuse equipment for the general clinic, and (an illuminative feature this) a botanical garden of several acres, under the management of Professor Railliet, appearing to me to be a splendid exhibition of plants of interest to the veterinarian that grow in that climate.

Intra-semestral examinations are given at intervals by the assistant professors after four days' notice to those who must take them. In these the student draws two questions from a prepared group, and is given ten minutes for reflection and ten to answer. All grades obtained are publicly posted. To pass to an upper class or to obtain the diploma the student must pass a final examination before the professor of each chair. The grades are submitted to the Minister of Agriculture for his personal consideration. Successful candidates are eligible to practise veterinary medicine and to compete for a commission in the veterinary service of the Army.

There are no veterinary laws in France as we know them in our several States. Anyone may practice, but the non-graduate is under such restrictions as to the particular disease he may treat and the drugs he may prescribe that the activities of the empirical practitioner are somewhat curbed. I fear, however, that the situation as regards empiricism is far from satisfactory to the practising veterinarian, and I am also assured that the condition in Holland, Belgium, Germany and Italy is no better. In these countries empiricism and the patent-medicine industry thrive uncurbed. Thus the veterinary practitioner, after having made this splendid preparation to practise, is little protected against cheap opposition, but in France everyone knows that the veterinarian and the quack belong to two entirely different categories of individuals.

[From "Some Notes on the Comparative Study of Veterinary Medicine in France and the United States," by L. A. MERILLAT, *Jnl. Am. Vet. Med. Assn.*]

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## Standardisation of Serums.

The conference, attended by representatives of ten powers, which is being held in London this week by the invitation of the League of Nations Health Committee, has considered the steps that should be taken for the standardisation of serums. The conference was formally opened at the Ministry of Health, on December 12th, by the Minister of Health, who, in welcoming the delegates, pointed out that invitations had been extended to countries not members of the League. The chair was taken by Dr. Th. Madsen, Director of the State Serum Institute in Copenhagen, who said that work on the lines desired had been begun some years ago by the Medical Research Council. The conference proposes in the case of all the serums discussed to consider the tests for sterility, for the amount of antiseptics present, and for the amount of proteins. It is hoped to arrange for a series of investigations on a uniform plan in leading institutes in the different countries. It is proposed also to institute a uniform system of indicating the dates of preparation and of issue. At present standard diphtheria and tetanus serums are maintained at the Institut für experimentelle Therapie, in Frankfurt, and in the Hygienic Laboratory of the United States Public Health Service. These two institutions are being asked to interchange their standard serums and to send them to the other institutes which will participate in the proposed investigation, in order that the relation between the two standards may be determined. As the methods for the standardisation of tetanus antitoxin vary in different institutes, a discussion of methods has been held, and a proposal has been put forward for an international unit of both diphtheria and antitetanus serums. With regard to dysentery serums, the position is much less well defined. The first question that must be settled is whether a standard serum should be prepared against the Shiga bacillus only, or whether it should include other dysentery bacilli. The action of meningococcus serum being to a great extent dependent upon the type of meningococcus against which it is prepared, knowledge must be obtained of the different types of meningococci in different countries, a uniform method of examination of the various types must be established, and a uniform system of nomenclature of the different types arranged. The four main methods of testing the potency of antimeningococcus serum at present in use are based on the agglutinin content; on the complement fixation standard; on the opsonin content (phagocytosis); and on the anti-endotoxic value and protective power. It is assumed that a serum rich in more than one of these antibodies will possess a comparatively high therapeutic efficiency, but further evidence on this point is needed. It is proposed that the standardised serums from different laboratories should be compared and different methods for standardisation examined, that an investigation of pneumococci in different countries should be made in as many institutes as possible, and that a uniform nomenclature should be devised. The two main methods it is proposed to use for determining the potency of the antipneumococcus serum are based on its agglutinating power and its anti-infectious action. Here again the question of a polyvalent serum arises. The conference intends, if possible, to evolve a scheme of making the serum diagnosis of syphilis reliable and the results in different countries comparable. Each of the institutes participating

in the inquiry will be asked to compare one or more other methods with its own by applying them in a large number of cases of known syphilis and of control cases. The results would then be collected and analysed and conclusions drawn, which would be submitted to other institutions for observation and experiment. On December 14th the delegates, together with a number of other guests, were entertained to luncheon by the Government, when Sir Alfred Mond was in the chair. The closing meeting of the conference was held later on the same day.—*British Medical Journal*, December 17, 1921.

### Horse Export Trade.

NEW AND STRICT RULES.

An Order of the Minister of Agriculture, published in the *London Gazette*, makes new rules under which the export of horses, asses, and mules will in future be carried on.

The new Order makes provision for the examination of animals by veterinary inspectors of the Ministry at the authorised ports of shipment—Folkestone, Goole, Harwich, Hull, Leith, London (including Tilbury), and Southampton. Detailed rules are made for accommodation on the ships. Among these is a provision, to come into force immediately, that horses, asses, and mules shall not be carried during the months of October to March inclusive, except under a permanent deck cover and in approved fittings. A ration of food for the animals must be provided on voyages lasting more than six hours.

If an animal is seriously injured so that it cannot be disembarked without cruelty, the master of the vessel may order it to be slaughtered, and every ship carrying these animals is to have a proper humane killing instrument for the purpose. The owner or charterer of a vessel is to keep a record of animals which have died or been seriously injured while on board, and is to make a return to the Ministry at the end of every month.—*The Times.*

### Help for Poor People's Dogs.

A new scheme for the treatment of the sick and injured dogs of poor people will begin with the new year, says *The Times*. Tickets are being issued by the National Canine Defence League to those of its members who, on hearing of a poor person's dog being in need of skilled treatment, will fill up the ticket. This ticket will be an authority to a veterinary surgeon to attend the dog and to send the account to the League. The tickets are also available for the destruction of dogs owned by poor people; and application has to be made to members of the League or to the head office at 27 Regent Street, S.W.1.

**The Veterinary Record.**
*7th January, 1922.*

## Abstracts and Reviews.

### Carbon Tetrachlorid and Hookworms.

The author recently published the results of tests of carbon tetrachlorid on dogs for the removal of parasitic worms, with special reference to the use of this drug on hookworms. Thirty dogs were given carbon tetrachlorid, and in all cases except one, a test of toxicity, all fæces were carefully examined for worms passed daily up to the time of death, when the animal was examined *post-mortem* and all worms present were collected. The results were very gratifying. In the case of the animals given 0·3 c.c. of this drug for every kilogram of live weight, a dose of three c.c. for an average sized dog (10kg., 22 pounds), all the hookworms originally present were expelled, a result I have never been able to obtain in any series of tests of anthelmintics on hundreds of dogs during the last six years.

Among the drugs previously tested were thymol, chenopodium, chloroform, and combinations of chenopodium and chloroform. The expulsion of all hookworms present was also obtained by the use of a mixture of carbon tetrachlorid and thymol in the proportion of 1 c.c. of the former and 0·648 gm. (10 grains) of the latter, and by the use of a mixture of carbon tetrachlorid and oil of chenopodium in the proportion of 3 c.c. of carbon tetrachlorid and 1 c.c. of chenopodium, the dose rate for the mixture being the same as for the carbon tetrachlorid alone. These mixtures, as well as the carbon tetrachlorid alone, were given in hard gelatin capsules, without purgation, to dogs after fasting eighteen hours. The carbon tetrachlorid is also very effective in removing ascarids, being only slightly less effective than chenopodium, which in my experiments has proved practically 100 per cent. effective in removing ascarids from dogs when given in doses of 0·1 c.c. per kilogram of live weight and immediately preceded or followed by 30 c.c. of castor oil.

The experiments on dogs have been followed by a series of experiments on horses and swine. The results of these experiments are not yet published, but the results indicate that the drug is very effective against the blood-sucking strongyles and moderately effective against ascarids.

SAFETY.

While the anthelmintic value of carbon tetrachlorid as indicated by these experiments warrants bringing it to the attention of the medical profession as worthy of attention in connection with the treatment of human beings for hookworm infestation: and possibly for ascarid infestation as well, the question of safety naturally deserves equal consideration. In the earlier article I summarised briefly the available medical literature in regard to carbon tetrachlorid. This drug received considerable attention about half a century ago by Sanson, Simpson, Protheroe Smith,

Morel, Laffont and others, for the most part as an anæsthetic when administered by inhalation. It appears from their work that the first stage of anæsthesia is one of excitation comparable to ether; this is followed by insensibility and finally by collapse if continued. Laffont notes that the pupil of the eye is constantly dilated throughout the first and second stages of anæsthesia. Simpson regarded it, on evidence that is not entirely conclusive, as more depressing to the heart than chloroform, and this statement, reiterated subsequently in the dispensatories, is perhaps responsible for the neglect of this drug for half a century. Protheroe Smith found the drug useful in overcoming pain, especially headache, dysmenorrhœal distress, tic doloureux and toothache, and of value in mitigating the suffering during labour, as it alleviated the pain without diminishing the uterine contractions. One death from inhalation was reported in the *Journal* in 1909, in which carbon tetrachlorid was used as a shampoo on a woman, 29 years old, a subject of status lymphaticus, the carbon tetrachlorid having been previously used for this purpose in 30,000 cases with no untoward results, other than one or two cases of fainting. It might be noted that carbon tetrachlorid, like chloroform, may develop phosgen (carbonyl chlorid) under certain conditions, and that such an impurity might have been present in this drug as used for shampooing. In the *British Medical Journal*, September 25th, 1920, a correspondent reports a case of carbon tetrachlorid poisoning in a girl employed in painting golf ball moulds with a paint containing this substance. The symptoms were vomiting, headache and anæmia. It is noted by the editor that the frequent inhalation of this substance may ultimately cause a toxic jaundice, which suggests that the drug might act on the liver in a manner similar to the action of chloroform in delayed chloroform poisoning.

So far as dogs are concerned, no macroscopic changes were noted in the liver after the oral administration of carbon tetrachlorid in doses up to 1·5 c.c. per kilogram of live weight, though the acute yellow necrosis, due to chloroform, is unmistakable in dogs after doses of 0·3 c.c. per kilogram. However, this is a matter which deserves further consideration in connection with the use of this drug as regards its safety. One dog in the series of thirty was given 1 c.c. of carbon tetrachlorid per kilogram of live weight, and kept alive for more than eight months, being recently killed in connection with another experiment. The dog appeared well and active at all times during the eight months, and showed no evident lesions post-mortem.

### Discomfort and Subjective Effects.

Another feature to be considered in connection with campaigns for the eradication of hookworms from man is the matter of discomfort and subjective effects on the patient. Opposition to treatment must be avoided whenever possible, and the production of headache, nausea, burning sensation in the stomach, etc., by such drugs as thymol and chenopodium, frequently makes it difficult to give a second treatment or to bring in new patients after the word has passed around that a first group have been made ill by the treatment.

In order to obtain first-hand information on this point in regard to carbon tetrachlorid, I tested the drug on myself, using the dose found effective in freeing dogs from hookworms, since the dose of most drugs, aside from such as strychnine and morphin, is the same for man as for dogs. The dosage for man and dogs is practically identical for almost all anthelmintics. Three c.c. of carbon tetrachlorid was swallowed in hard capsules, three hours after a light breakfast, and after smoking a cigar. The pulse at the time was 90. Forty minutes later, Dr. Walter H. Chapin, a physician ,of Springfield, Mass., found the pulse to be 78, with apparently a normal pressure. I did the usual day's work at the office during the morning and spent the afternoon making a *post-mortem* examination of some horses. Meals were taken at the usual time and in the usual amounts, and more than the usual amount of exercise was taken. After the treatment, I smoked three cigars and a pipe during the day. Seven minutes after taking the drug, there was an eructation of carbon tetrachlorid, and during the first half hour there was a sensation of warmth, not sufficient to be called a burning sensation, in the abdomen. This sensation passed away after a short time. There was no evidence of constipation, the drug apparently having a mild laxative effect.

While this one test is not conclusive, it apparently bears out the indications from the experiments on animals, that the drug administered by mouth in therapeutic doses produces no evident symptoms. If it can be taken by a man forty years old, without any precautions as regards food, smoking and exercise, without producing any symptoms of discomfort, and without interfering in any way with the day's work, it would appear to be reasonably safe for the average human being. Anthelmintics in general cannot be taken with equal impunity. Following such drugs as thymol, chenopodium or male fern, it is advisable for the patients to rest, at least, to lie down if feasible, and to go to bed preferably. The list of deaths from thymol, chenopodium or male fern is long enough to warrant further study of any drug that holds out promises of greater safety.

Through the courtesy of Dr. McCoy, director of the Hygienic Laboratory of the U.S. Public Health Service, I have had the opportunity to make some toxicity tests of carbon tetrachlorid on monkeys, in co-operation with Dr. Gleason Lake, of the Hygienic Laboratory, and Dr. J. E. Shillinger, of the Bureau of Animal Industry. Assuming that the indicated dose of the drug for man is the same as that for the dog of average size, 10 kg. (22 pounds), these animals were given from two to five times that dose, or 6, 9, 12 and 15 c.c. These monkeys weighed from 2·5 to 3·5 kg. (4½ to 7½ pounds). One monkey weighing 2·5 kg. (4½ pounds) received the dose of 12 c.c., or approximately 6 c.c. per kilogram of live weight. Aside from the fact that one or two monkeys ate less

than usual for a day or two, no symptoms of injury were noted. After holding the animals for a month, with no evidence of delayed poisoning developing, we released them for other experiments. In the opinion of Dr. McCoy, toxicity tests in monkeys are excellent indications of probable toxic effects of drugs on man, and the apparent safety of carbon tetrachlorid is distinctly indicated by this experiment.

EXPENSE.

A final word in regard to this drug is on the score of expense. Carbon tetrachlorid is cheap, much cheaper than chenopodium or thymol, and can be purchased almost anywhere, at any time. It is very easy to make. Finally, the fact that it does not depress unstriated musculature or lessen peristalsis, so far as it has been studied in this respect, would permit of an immense saving by the omission of a purgative in carrying on hookworm campaigns, involving millions of people.

It is not my intention to urge the use of this drug clinically on the basis of the evidence at hand. Due precautions are indicated in using any drug in a new manner and for a new purpose. The intent in this article is to call the attention of physicians, and especially of those interested in hookworm work, to the possible usefulness of carbon tetrachlorid for the removal of hookworms and ascarids. It may be said in passing that it is apparently of no value for removing tapeworms, so far as experiments show, and is as unreliable as other anthelmintics for removing whipworms, sometimes removing them, and more often leaving them. A chemically pure drug must be used precisely as in the case of chloroform, or any other drug for that matter. In this respect the definite chemical composition of carbon tetrachlorid gives it a definite advantage over oil of chenopodium, which is a mixture of a number of compounds in very variable proportions, which fact may account for some of the bad effects following its use. So far as can be judged at the present time, carbon tetrachlorid is apparently more effective, safer and cheaper than the drugs used at present to remove hookworms.

[HALL, M. C. "The Use of Carbon Tetrachlorid for the Removal of Hookworms." *Journal of the American Medical Association*, 1921, November.]

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## United Provinces Civil Veterinary Department Report.

The report of the above department for the year ending March 31st, 1921, includes the following:—

It is satisfactory to report that a substantial progress has been made during the year in all branches of the department. The most noticeable feature is the decrease in contagious diseases amongst cattle, especially as regards rinderpest, also the increase in inoculation which shows that the general public are now realising the benefits of inoculation. Since the 4th December, 1920, Captain W. H. Priston has been posted to these provinces as third Superintendent, and is at present under training. Now that the Imperial officers are up to sanctioned strength, there will be much more direct supervision into the investigation and suppression of contagious disease.

Detailed estimates have been submitted to Government for the erection of a Model Dairy near Lucknow, and it is hoped that the work of construction will be put in hand in the near future.

Messrs. Sutton and Sons, Reading, England, have kindly presented us with their No. 1 Educational Cabinet of grasses, for which we are very grateful.

Investigation into the prevalence of tuberculosis in cattle was carried out in a small way, and a separate report is being submitted to Government. It is hoped next cold weather to take the matter up more fully.

Plans for the establishment of a veterinary college at Lucknow are being drawn up by the Government Architect on the same lines as the veterinary college, Lahore, and will be submitted to Government for final sanction.

The new offices and laboratory are in the course of erection, and it is hoped will be ready by the beginning of the cold weather.

For rendering genuine assistance in inoculation work and encouragement of animal breeding two sanads have been awarded.

Mr. Stow has continued to carry out his duties in a hard-working and painstaking manner, and the farms under his charge are continuing to show a steady progress. Mr. Evans has continued to carry out his work in connection with sheep-breeding in a very active manner. I am indebted to the Deputy Superintendents Khan Sahib Sheikh Niaz Muhammad, S. M. Raza Husain, and Mr. T. S. Davies for their valuable assistance and help they have rendered me during the year. The subordinate staff, both clerical and veterinary, have continued to work most satisfactorily during the year. I wish to bring to the notice of Government the meritorious way the head clerk, now head assistant of my office, Babu Srish Chandra Bhattacharya, has carried out his arduous duties.

S. G. M. HICKEY, CAPTAIN, M.R.C.V.S.,
*Officiating Veterinary Adviser to Government, United Provinces.*

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## Bengal Reports.

DEPARTMENT RESOLUTION.

Colonel Smith, Principal, Bengal Veterinary College, held charge of the college throughout the year except from 1st July to 30th September, 1920, when he was on furlough. During this period Mr. P. J. Kerr, who was temporarily appointed as second Imperial officer, was in charge of the college. Mr. A. D. MacGregor held charge of the office of the Superintendent, Civil Veterinary Department, from the beginning of the year till the 22nd November, 1920, when he went on combined leave for eight months, and Mr. P. J. Kerr remained in charge of the office of the Superintendent till the end of the year except for a period of 27 days, when he went on combined leave, and Colonel Smith held charge of the department in addition to his own duties as Principal of the college. A second Deputy Superintendent for the department was sanctioned during the year for the Eastern Bengal divisions, with head-

quarters at Dacca. This appointment will, it is hoped, materially improve the work of the department in the eastern portions of the province.

2. The number of students at the Bengal Veterinary College at the end of the session was 127, of which number 53 belonged to Bengal, 45 to Bihar and Orissa, and the rest to other provinces. Owing to a large number of students leaving the college, there was a fall in the number of students as compared with the preceding year's figure, which was 158. During the year 24 students graduated from the college, of whom four belonged to Bengal. All the new graduates have been employed as veterinary assistants.

3. The report of the Civil Veterinary Department shows a marked increase in the mortality of animals from contagious diseases during the year, the total number of deaths reported being 19,344 as against 14,898 in the previous year. The increase is due to severe outbreaks of rinderpest in several districts of this presidency, this disease being responsible for 17,425 deaths as compared with 12,178 deaths in the previous year. The Superintendent, Civil Veterinary Department, reports that with the increasing attention given to details, and greater facilities for ascertaining and reporting outbreaks, many more cases now come to light than in past years. In all 539 outbreaks of rinderpest, hæmorrhagic septicæmia, and anthrax took place, and 86,354 animals were inoculated as against 537 and 84,896 respectively of the previous year. It is satisfactory to note that the death-rate amongst the inoculated animals was small, being only 1·06 per cent. for the whole province.

Leaflets dealing with the prevention and treatment of cattle diseases were freely distributed as usual. The Government (Ministry of Agriculture and Public Works) notice with satisfaction that in the work of inoculation very little opposition is now met with in the advanced districts of the province, and that the beneficial result of the practice of inoculation is gradually overcoming the prejudices of the people.

4. During the year under report the itinerant veterinary assistants visited 12,756 villages and treated 69,584 animals as against 12,831 villages and 58,761 animals in the previous year.

5. In Calcutta and its suburbs all the stables and cattle-sheds were frequently inspected. Glanders was detected in 23 stables only, against 30 in the previous year. In the mufussal only three animals either succumbed to the malady or were destroyed under the provisions of the Glanders and Farcy Act.

6. The number of stud bulls kept by Government and local bodies increased from 124 in the previous year to 132 in the year under report. Of these, 65 are the property of local bodies.

7. Two new dispensaries were established during the year, thus bringing the total number of institutions to 37, whilst it is satisfactory to note that the establishment of more dispensaries is under contemplation. The number of patients treated at these dispensaries was 41,074, as against 44,747 in the previous year. The decrease is reported to be due partly to a smaller number of animals being treated at the Sodepur Pinjrapole and partly to certain dispensaries remaining closed on account of the absence on leave of the veterinary assistants when no substitutes were available.

8. During the year under report the administrative control of the Civil Veterinary Department was transferred from the Director of Agriculture to the Principal, Bengal Veterinary College, he being the senior veterinary officer in the province, and he was made the head of the Civil Veterinary Department with the designation "Veterinary Adviser to the Government of Bengal." During the year revised scales of pay were sanctioned both for the Imperial and Provincial Veterinary Services.

9. The work of the Deputy Superintendents, Civil Veterinary Department, Veterinary Inspectors and the staff of the Bengal Veterinary College was satisfactory. The Government (Ministry of Agriculture and Public Works) have much pleasure in acknowledging the valuable services of Colonel Smith and in recording their appreciation of the work done by Messrs. P. J. Kerr and A. D. MacGregor.

By order of the Government of Bengal
(Ministry of Agriculture and Public Works),
J. A. L. SWANN,
*Secretary to the Government of Bengal.*

(The Annual Reports of the Veterinary College and of the Civil Veterinary Department, Bengal, for the year 1920-21.)

### CATTLE CENSUS REPORT.

To the report of the Cattle Census of the Presidency of Bengal, which was taken between January 6th and 13th, 1920, is attached a large number of appendices containing a mass of figures. Regarding these the Director of Agriculture, Bengal, notes that "No claim for exactness can be set up for these figures, but on the whole they can be accepted as fairly correct. It is hoped that when the principles on which the enumeration should be made are better understood more accurate results will be secured."

Everyone who has had any practical experience of the difficulties which always spring up whenever any attempt is made to accurately enumerate anything in India, will sympathise with the Director of Agriculture. In Bengal where the agriculturists are almost entirely Hindus, these difficulties would be greatly accentuated when the counting of the cattle was undertaken. No one without Indian experience can appreciate the exasperating strain which any attempt at accuracy in taking a cattle census amongst these people entails on the European mind. To accept the figures as even "fairly accurate" requires more reliance on the work of the Bengal Panchayats than usually remains to those who have experienced the working of these Councils, even when this is carried out under the general supervision of the already over-worked district officers.

This is the second census of its kind, the first being taken in 1912, and during the period which has elapsed between the two censuses, although famine conditions and floods, droughts and cyclones have appeared in parts of the province, there has been no marked scarcity of fodder for the stock. It is stated that "outbreaks of cattle diseases were, as usual, very common during these years, but they appeared to be most severe in 1917-18. In that year rinderpest in a somewhat virulent form appeared in several districts, and especially in 24-Parganas, Noakhali, Rangpur and Bakarganj."

The chief points brought out by the statistics are :—

(*a*) The increase in the number of Brahmani bulls, which is 19·12 per cent. over that of the 1912 census. A Hindu receives considerable religious credit by letting loose a young bull, but it has frequently been reported that latterly the animals selected for this purpose are as often as not poor specimens of their breed. These Brahmani bulls wander over the country living at the expense of the inhabitants, especially the farmers and shopkeepers, who often suffer very severely from their depredations. When the country was more sparsely populated, and these bulls were more carefully selected, there is no doubt they went far to supply the necessary males required for the large number of cows ; but latterly with an increased population and more intensive cultivation it is doubtful whether these Brahmani bulls are not in reality a source of loss to the population. There can be no doubt but that they contribute a very decided restraining factor to any steps which may from time to time be taken to improve the breed of the cattle in a district, and their unrestrained movement over the country gives rise to a serious menace of spreading contagious disease.

The Brahmani bull is not by any means an unmixed blessing, and we greatly doubt whether the increase in the number of these animals during the eight years which intervened between the two cattle censuses has made for the progress of the cattle industry in Bengal. Every enthusiastic gardener in India must have experienced the destruction of many weeks of work owing to one of these bulls gaining access to his compound, and will consequently not welcome any increase in their number.

(*b*) An increase in the plough cattle of 4 per cent. If it is an actual increase and not merely due to more conscientious reporting, this is a step in the right direction. The plough cattle, which in addition to cultivating the fields also work at the wells, are the mainstay of Indian farming. It has been truly said that they carry the agriculture of the country on their backs. It will be a very long time before the tractor will be in general use on the plains of India, where, as a rule, the holdings are small and irrigation is absolutely essential to the raising of certain crops, consequently any increase in the *plough cattle* is a distinct advance, and incidentally accentuates the demand for an up-to-date efficient veterinary service. The plough bullock is usually of the same breed as the milch cow, and the male buffaloes used for ploughing are also the same as the milch buffaloes, being the inferior males which are not selected for breeding.

(*c*) The increase in the number of milch cows, 13·44 per cent., points to an increase in the prosperity of the villagers.

(*d*) The serious fall in young stock of 24·23 per cent. since 1912, would be very serious if it could be accepted as a correct statement of existing conditions. It is explained in the report that owing to a misunderstanding in the 1912 census young stock between two and three years of age were in that year included under the heading of calves, whereas in 1920 they were returned as adult cattle. This and other unexplained causes, with probably the already alluded to difficulty of obtaining accurate returns in a census of this nature, under existing conditions, may be taken to discount any serious fall in the number of young animals. The fact that the number of milch cattle has markedly increased discounts any reference to the straitened circumstances of the people being an explanation of the reported reduction in the number of their young cattle.

The statement that the number of imported cattle has fallen can hardly be relied upon, as information regarding the breeding of cattle is often most unreliable and difficult to obtain.

It is stated in the report that "The total number of cattle is now returned at 24,724,234, showing a general decline of 2·56 per cent. over the figure of 1912. The decrease on the whole is variously ascribed to the deterioration of the condition of the cultivators during the past few years, due to high economic strain, to the want of suitable breeding bulls, to lack of grazing grounds, and to the general neglect of the people to devote reasonable care to the management of their cattle. Grazing areas are few, and such as exist are likely to decrease in area in the future. The importance of fodder crops is therefore becoming more and more evident, and their extended cultivation is urgently required." In reading this we must not forget that the report is produced by the Agricultural Department who are never slow in pressing on the public the importance of the cultivation of crops which they consider is peculiarly their own province. The figures given in this census of the total number of each class of animal are so enormous when we remember that we are dealing with only the Presidency of Bengal, a comparatively small area of India, that we give them in detail :—

| | |
|---|---|
| Brahmani bulls | 31,141 |
| Other bulls :— | |
| Indigenous | 1,074,768 |
| Imported from outside the province | 18,695 |
| Bullocks :— | |
| Indigenous | 7,788,787 |
| Imported from outside the province | 440,963 |
| Cows :— | |
| Indigenous | 8,022,741 |
| Imported from outside the province | 95,494 |
| Young stock (cattle) | 6,225,844 |
| Male buffaloes | 639,143 |
| Female buffaloes | 260,084 |
| Young stock (buffaloes) | 126,574 |
| Sheep | 502,867 |
| Goats | 3,893,199 |
| Horses and ponies | 123,910 |
| Mules | 882 |
| Donkeys | 1,154 |
| Camels | 148 |
| Grand total | 29,246,394 |

If a liberally treated veterinary service is required in any part of our Oversea Dominions it is India, and especially the Presidency of Bengal, which stands out as having the greatest claim. Here there is a great wealth of cattle providing a means for carrying on an intensive cultivation which enables a teeming population to exist on probably one of the closest populated areas of our Empire. Without its cattle this great population would starve, and the one official who can keep these animals free from devastating disease is the veterinary officer.

(L. J. B., *Vety. Jnl.*, 1921, Dec.)

# Clinical and Case Reports.

**The Editor will be glad to receive from members and others contributions to this column of reports of interesting cases.**

## Recurrent Orchitis in Donkey Colts.

By R. Branford, M.R.C.V.S., I.C.V.D., and E. Sewell, M.C., M.R.C.V.S., I.C.V.D.

Traumatic orchitis in working donkey stallions has been not uncommon here (Government Cattle Farm, Hissar) during the last ten years, more especially in donkey stallions that have been working loose. It has been exceedingly rare in young stock. Therefore what might almost be called a small epidemic amongst the young colts has given rise to a certain amount of uneasiness, particularly as the origin of the disease could not be traced to any cause.

The disease first made its appearance in October, 1920; it differs in several important details from traumatic orchitis. In the traumatic orchitis with which we are familiar there is very often a history of injury, or failing that, as it has usually occurred amongst mature donkey stallions working loose, a history of injury whilst covering might reasonably be assumed.

This form of orchitis yields readily to ordinary therapeutic measures and very seldom recurs.

The disease as recently observed in the young stock has several characteristic features.

*Symptoms.*—Some of the animals affected were in the first place admitted to hospital suffering from fever, and in the course of a few days developed a very acute orchitis. The majority of cases were admitted suffering from orchitis and epididymitis—the right testicle being more often affected than the left.

The disease is characterised by a high fever, total loss of appetite for some days and a tense swelling of the testicle and prepuce which is not painful to the touch.

The animal invariably allows one to manupulate the affected parts without showing any sign of discomfort. Animals once admitted to hospital return with unfailing regularity. Some have had as many as four attacks.

In some cases the testicle appears to revert to the normal in from 3 to 6 weeks. In others, although

the testicle appears to be of normal consistency, there is a distinct increase in size, whilst in other cases the testicle remains enormously enlarged and becomes hard and fibrous.

After the initial fever subsides the animal appears to suffer no inconvenience, does not lose condition, and eats well.

Blood examination shows an extensive leucocytosis. There appears to be an increase in the eosinophiles, but as the blood of the equidæ normally seems to carry a larger percentage of eosinophiles than the blood of the other domestic animals, and as we had no means of carrying out a differential count, we cannot affirm this with any degree of certainty. The Iodophilic reaction gave negative results.

*Operation.*—Eventually it was decided to remove an affected testicle from an animal that had had several attacks.

When the incision was made, the testicle, tunica vaginalis and scrotum were found to be adherent. The scrotum was enormously thickened, and it was with considerable difficulty that the adhesions were broken down. This was done eventually and a clamp applied. As soon as pressure was brought to bear on the cord with the clamp, the cord snapped like a rotten twig and the testicle rolled on to the ground. There was little bleeding, which is not what one would expect under normal conditions.

The testicle was very much enlarged, and weighed 1 lb. 6 oz. When cut into, the epididymis appeared almost cartilaginous. The substance of the testicle was of a light chocolate colour, and there appeared to be small pin heads of pus scattered throughout the gland.

In the literature at our disposal we can only find reference to one analagous outbreak. This was observed by Lesueur and Lavergne at Havre, and occurred as an enzootic in a stud of entire horses, 8 out of 34 being affected. In every affected testicle a very small characteristic bacillus was isolated from the centre of the lesions in the epididymis. The lesions, as in the cases described above, were generally confined to one testicle, the testicle and its coverings forming one solid mass. Ruthless castration eventually defeated the condition (*vide* Wallis Hoare's System of Veterinary Medicine, volume I.).

As the object of breeding donkeys at the farm is to turn out reliable sires for the districts, it can readily be understood that any marked increase in the condition must be regarded as a serious matter. At the same time it is obvious that castration on a large scale cannot be carried out except as a last resort.

The following is the report of Mr. W. Taylor, M.R.C.V.S., D.V.H., Pathologist, Punjab Veterinary College, Lahore.

*Result of examination.*—Negative. Proliferating fibrous tissue in cord, but not in testicle.

Since the above was written we have isolated from the epididymis of an affected stallion a bacillus which we consider may be the causal organism. The bacillus is short, and its growth so far appears to be identical to that of the bacillus which Branford and Doyle consider to be the cause of contagious abortion in donkey mares. Work on the subject is proceeding, and any tangible results will be published in due course.

[Department of Agriculture, Punjab. *Veterinary Bulletin No. 4 of* 1921.]

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## Undiagnosed—A Warning.

By D. MARSHALL, M.R.C.V.S., Otago, N.Z.

*Subject.*—A five year old Clydesdale mare.

*History.*—She had been behaving somewhat stupidly for two or three days. Some weeks ago had suffered from a bad cold, with harsh cough, but no nasal discharge. At present, 19th May, 1921, going about, head poked out a little, inclined to stray from other horses in the paddock, had to be led through stable door, went up into wrong stall, etc. Feeding well and in good condition.

I suggested defective vision from brain lesion.

*Examination.*—Two days later, mare somewhat worse. Was standing in stall, head against the front, all four feet collected under her. Pulse 45, temp. 99·7. Respirations, bowel sounds, eyesight apparently normal. In fact, nothing abnormal, except her behaviour. She was backed out with difficulty; when asked then to move, she seemed to have forgotten the first movements in walking, and leaned forward as if to topple over, but when she did make a step, moved off freely, and in a straight line, and wouldn't stop till brought up against a solid object.

The only possible cause occurring to the owner was the use of some heated chaff a fortnight previous. No other horse had been noticeably affected. She showed no gastric symptoms.

My diagnosis, beyond "brain trouble," was quite uncertain, but the prognosis very positive—a bad combination. I felt certain the mare would get down very soon and die within a couple of days. So advised the owner to take her out and destroy her to save himself much vain worry. This he was naturally unwilling to do, so we compromised by tethering her outside to a strong post where she could wander round at the end of a fifteen-yard rope, and putting two rugs on.

I gave a full dose of arecolin and strychnine.

*26th May,* 1921.—Owner reports no alteration, though considerable temporary improvement on night of 21st. Still eating well, lying and rising unaided.

In the meantime, after prolonged consultation of Wallis Hoare, I fixed on dropsy of the lateral ventricles as most nearly fitting the symptoms, and felt confirmed in prognosis. Put her on ℥i doses pot. iodide daily, in feed.

*1st June,* 1921.—Mare looked very dull, head down, pulse 40, but owner said she had had occasional bright intervals, when she could go for water by herself, or would graze freely. He was taking considerable trouble with her, constantly attending to her rope and rugs, and feeding her regularly with a nose bag.

*6th June*, 1921.—Owner reports mare much brighter. Had got cast three nights ago, and struggled a lot, was afterwards very stiff, but much more intelligent looking, was left loose, and grazed and went to water.

From this time mare made a rapid recovery, and was soon galloping round with the rest. Up to the present (October) she shows no sign of recurrence.

This case adds little to clinical knowledge in the absence of the autopsy on which I had counted. Recovery could hardly have been so rapid from an organic lesion. It does indicate the danger of too hastily advising destruction, even with the best of motives.

The owner was as much surprised as myself by the recovery.

## South African Veterinary Association.

GENERAL MEETING.

A General Meeting of this Association was held at the Laboratory, Onderstepoort, Pretoria, on the 9th September, 1921. There were present: Colonel J. Irvine Smith, C.B.E. (President), Lt.-Colonel J. G. Bush, D.S.O. (Treasurer), Messrs. Borthwick, Dixon, Curson, Chase, Brunner, Hutchinson, Mitchell, Dr. Veglia, Dr. Du Toit, Dr. Andrews, Professor De Kock, Major Johnston and Major Tate.

Professor DE KOCK proposed that in the absence of the President, who had been delayed owing to an accident on the road, the chair should be taken by Mr. Dixon. Mr. CURSON seconded.

Mr. DIXON then took the chair.

Dr. TU TOIT read his paper entitled "A Review on Trypanosomiases."

Colonel J. IRVINE SMITH arrived during the reading, and took the chair.

The PRESIDENT thanked Dr. Tu Toit for his very excellent paper, which they had all listened to with great interest, and regretted that the time at their disposal precluded the possibility of a discussion.

The minutes of the last meeting, having been circulated, were taken as read.

Professor DE KOCK proposed, and it was adopted, that all detail in connection with the election of members might, with advantage, be eliminated from the minutes.

*Apologies.*—Letters of apology for non-attendance, received from Messrs. Woollatt and Verney, were read.

*Nominations.*—The PRESIDENT announced that the following gentlemen had been nominated for membership of the Association: Messrs. Borthwick, Jackson, S. T. Henderson, Strachan, McKenna, D. D. Morton, and J. Brandsen.

*Elections.*—All the above were duly elected with the exception of J. Brandsen, whose name was referred to the Council for consideration as to his qualifications.

*Resignations.*—The PRESIDENT announced that the following gentlemen had resigned their membership: J. M. Sinclair, G. McCall, C. E. Gray.

It was agreed that the Secretary should write to Mr. Sinclair, asking him to withdraw his resignation, in view of the likelihood of Rhodesia becoming a part of the Union. It was also agreed that Mr. C. E. Gray's resignation be referred to the Council, with a view to his being made a life member. As Captain McCall had left the Union, it was decided to accept his resignation with regret.

Professor DE KOCK proposed that Rule No. 19 be amended to read as follows:—"Any member unable to attend a general meeting should send an invitation to the Secretary, and may ask any member attending to vote on his behalf at the election of Executive Officers, the delegation of authority being in writing for transfer to the Secretary at the time of voting."

The PRESIDENT announced that proxies had been handed him as follows:—Mr. Chalmers, by Mr. Curson; Mr. Henning, by Dr. Du Toit; Captain Webb, by Lt.-Colonel Bush; Captain Clemow, by Lt.-Colonel Bush (and others on the list held by the President).

The PRESIDENT expressed the hope that it would not be necessary to exercise the proxies. They had met for a full discussion on several important subjects, and it would be better if decisions could be come to, if possible, without voting.

Professor DE KOCK said that the reason of his motion was, that if proxies were to be generally exercised, it might easily happen that during discussion the original motion might undergo considerable change, and a very useful amendment might be lost as a result of proxies. Members should attend meetings and express their views. He had no objection to the voting at the election of office bearers being by proxy.

Dr. DU TOIT seconded.

Mr. DIXON expressed sympathy with the motion. He thought that if members could not attend they should not be able to vote, but agreed to the exercise of proxies at the election of office bearers.

Mr. MITCHELL thought it would be better to send out voting papers for the annual election of office bearers and abolish proxies altogether. This had been done in the past, and although it entailed more secretarial work, it was certainly a better system. He moved an amendment to this effect.

Professor DE KOCK withdrew his motion in favour of Mr. Mitchell's amendment.

Mr. DIXON asked if the Secretary could undertake this extra work, and whether the cost would not be very great.

The PRESIDENT suggested that if the amendment was agreed to, the matter should be referred to the Council for the drawing up of the necessary rules with regard to procedure. He drew attention to the impossibility of many members from the outlying districts attending meetings, and thought the door should be left open for such members to express their views in writing.

Dr. ANDREWS supported the President's views with regard to members in outlying districts, and thought that it was only right that they should be given an opportunity of expressing their views.

Mr. MITCHELL agreed to embody the suggestion in his proposal as follows:—"That every member of the Association can express his views to the

Secretary in writing, on any question which is coming up for discussion, and these views will be brought up at the next meeting for consideration."

VETERINARY BILL.

The PRESIDENT said that the principle of the Bill had been agreed to, and there now only remained a few clauses which had still to be discussed. He read a document which had been found in the Association's files, and which had presumably come from the Royal Veterinary College, London.

The following clauses in the draft Bill were then discussed in detail :—

*Clause* 1.

Dr. DU TOIT proposed that the number of Council members should be altered from 11 to 12, and should include two University members, three Government members, and seven elected members.

Dr. ANDREWS seconded.

The PRESIDENT said that there were roughly 120 veterinary surgeons in the Union, and that they were therefore asking for a 10 per cent. representation on the Council. He personally thought that a small committee was very much better than a big one. The expense in connection with calling a meeting of Council would be a great one and would have to be borne by the Profession. He asked the meeting to consider the advisability of appointing a Council of three members, or even seven, and to consider how representation could be arranged on this basis. He did not think that the increased representation of Universities was of very great importance, but the financial side of the arrangement certainly was.

Dr. DU TOIT said he agreed with the President with regard to the advantage of a small Council, if this was decided upon.

Lt.-Colonel BUSH said that he was quite convinced that a Council of the size suggested was an impossibility. When eleven was first suggested, it was also laid down that the annual subscription should be five guineas. Such a sum would be necessary to pay the expenses in connection with a large Council, but he considered that it was more than they should be asked to pay.

Dr. DU TOIT proposed that the Council should consist of six members, viz. :—one University, two Government, three elected.

Professor DE KOCK seconded.

AGREED.

*Clause* 22.

Dr. DU TOIT said with reference to amendment "B" that there was a danger of the Profession being flooded, and proposed that the period mentioned in the amendment be altered, and that the amendment should read as follows :—

"The provisions of paragraph (*b*) of sub-section (1) shall not apply to any person who at the date of taking effect of this Act shall have been domiciled in the Union of South Africa for a period of not less than three years, and who holds the prescribed diploma granted by the Royal College of Veterinary Surgeons in the United Kingdom, or any other approved foreign veterinary degree or diploma entitling him to practice in that country, provided that he makes application for registration within a period of twelve months after the taking effect of this Act."

Dr. ANDREWS said he did not altogether agree with reciprocity within the Empire. We all knew that in some dominions the standard of veterinary education was not all that could be desired, and as long as this was so, reciprocity was not advisable.

Dr. DU TOIT said that reciprocity in the true sense of the word was provided for. He hoped that it would be possible to arrange for holders of the diploma of the Royal College to be admitted to the status of B.V.S. on application to the Senate of the University of South Africa.

The PRESIDENT thought the subject should be approached in a broad spirit. He personally was quite satisfied with the diploma which he held at present, but they must look at the matter from more than the merely personal aspect. They were, after all, only here temporarily, and if they could possibly help things forward for the profession generally in South Africa, they should try to do so.

After further discussion, it was agreed to leave it to the Council to amend the clause according to the views expressed.

Dr. DU TOIT proposed that the Royal Veterinary College should be informed with regard to the changes which had taken place since 1918, when their last criticism to the draft Veterinary Act was received. He thought the Secretary should now be instructed to write with regard to the curriculum which had been drawn up in South Africa, etc.

(*To be continued.*)

# Notes and News.

## Renewal of Motor Licences.

Members may be reminded that by the new arrangements that have come into force this year they would do well to set about renewing their motor car licences as soon as possible, and not wait until the turn of the year, as formerly. All information applicable to each individual case can be obtained by applying for the necessary form at the local post office.

## Magisterial Comment.

The effect of holiday rest on horses was described at Lambeth Police Court recently, says the *Evening Standard*, when a carman named James Spurling was charged with working a lame horse.

A constable said the horse was so lame that it could hardly put its feet on the ground. It eventually collapsed and had to be removed on an ambulance.

Mr. Thomas Dickinson, a veterinary surgeon, said the animal was suffering from paralysis. There were a great many such cases on the Wednesday as the result of the holidays. Horses were dropping "all over the place."

Mr. Herbert King, another veterinary surgeon, stated that in these cases the lameness came on instantly. After resting some horses were affected in this way and fell, and were unable to rise.

He himself had been called to eight such cases. The animals affected were very fat, lethargic horses. After they were rested this condition arose.

Mr. Rooth (the magistrate).—It is a very curious state of things. The evidence I have heard to-day is quite remarkable, but I am bound by it. As far as I can see, yesterday one would find a difficulty in threading their way through the streets owing to the number of paralytic horses lying about them. I am somewhat astonished, because I was about the streets myself and did not see any.

The accused was discharged.

### Obituary.

MR. F. W. MORRIS.

The death occurred on Wednesday of last week, at his residence, 40 Blackburn Road, Bolton, of Mr. Frederick W. Morris, M.R.C.V.S., who for the last 25 years has carried on an extensive practice in the town as a veterinary surgeon. A native of Bolton, Mr. Morris was educated at the Bolton Grammar School, and afterwards went to the Veterinary College at Edinburgh, where he took his diploma in 1895, coming back to Bolton to take up practice. Since then he has made many friends amongst farmers and horsekeepers in the district, and was held in high esteem by all to whom he was known. He has suffered from heart trouble for some time, and retired from practice last spring. Aged 47, he leaves a widow and one son to mourn their loss.—*Bolton Evening News.*

On Dec. 21st, at St. Andrew's Hospital, Northampton (of tuberculosis), JAMES PATON, F.R.C.V.S., late of Stevenage, Herts. Aged 53.

# Correspondence.

**Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue**

**All correspondence must bear the name and address of the contributor for publication.**

**The Editor does not hold himself responsible for the opinions of his correspondents.**

### Miserable Salaries.

Sir,—My attention has been drawn to the comments, in your recent issue, on my article in the *Nineteenth Century* relative to the old horse traffic, and to my allegations about the "princely salary of £300 a year" and the unnecessary parsimony of the Ministry of Agriculture in giving their veterinary inspectors such a remuneration.

My strictures were not, of course, directed against the veterinary profession, whose duties towards the animal kingdom, if properly carried out, are deserving of the highest credit, but against a Government Department, who estimate the services of a professional man (whose education you say must have cost his parent or guardian at least £1,000) at a figure which many mechanics would refuse with contempt. Especially is it "parsimony" in this instance, because, as you say, and as was verified by questions in the House of Commons, "the fees for examining horses for export in 1920 brought in a total sum of £14,594, whilst the cost of these examinations had only amounted to £4,006. This shows a clear margin of £10,500 of profit on the transaction.

Surely, as I quoted, "the labourer is worthy of his hire"? It must be obvious to any business man that the members of the veterinary profession do not realise this or they would unite to alter it. The remedy lies in their own hands, and, so long as they accept so low a pecuniary value for their services, so long will such salaries be offered, to the great detriment of the profession and its standing.—Yours faithfully, LAMBOURNE, Chairman.

Royal Society for the Prevention of Cruelty to Animals,
105 Jermyn Street, S.W.1, November 21st, 1921.

### Parliamentary Representation.

Sir,—Your Editorial "Veterinary Legislation" in this week's *Record* must have been perused with the greatest pleasure by all your readers, as it explains the really excellent work that has been rendered to the community by the veterinary profession, "in spite of the shameful neglect of the State to provide it with means to carry out its duties."

I think it is now almost agreed that at no distant date there will be an enquiry of some kind into veterinary education especially with regard to the powers of the Royal College of Veterinary Surgeons. Here again your article clearly demonstrates that the veterinary profession need have no fear of such an enquiry; its past can stand the light of day. Still we must be prepared for any emergency, and many consider that the time has arrived, especially after the ignorance shown on matters veterinary during the debate on the Veterinary Surgeons Amendment Act of 1920, when we must make an united effort to have a veterinary graduate to represent the profession in the House of Commons.

We have many good friends in the House already, to whom we are most grateful, but they have many other interests to look after, and cannot be expected to speak with the same authority or listened to with the same sympathy as a veterinary surgeon would be on veterinary topics. Especially would this apply to debate on any milk legislation that may come along—legislation which the veterinary profession should take a large share in administering.

With so many able men available, a suitable candidate would not be difficult to find, and I can see no insurmountable difficulties in attaining this end, provided the necessary consideration is given to the matter in the proper quarter.

J. J. AVESTON, M.R.C.V.S.

Henrietta Street, Bath,
Dec. 27th, 1921.

### A Canine Problem.

Sir,—I saw many cases of canine typhus in 1898 and 1899, and have seen a few since then. Just because I appreciate a bit of fair play I would like to comment on the letter of Captain Hamilton Kirk, M.R.C.V.S., which appears in your issue of December 24th. It is probably true that *gastro-enteritis hæmorrhagica* is not transmitted from dog to dog by contagion because it is said there are no discharges containing the active virus, but the disease often being a widespread epizootic, it follows that *many animals in one place, region or area* may be attacked. Captain Kirk states that distension of the bladder is rare in Stuttgart disease, but Hutyra and Marek say:—"The urine frequently can be passed only on pressing *the greatly distended bladder.*"

As regards temperature, H. Gray (Wallis Hoare's "System of Veterinary Medicine") says:—"The internal temperature at the beginning of the complaint is often elevated 1, 2, 3, 4 or 5 degrees." In many of the cases I saw there was no necrosis or gangrene of the tongue. Captain Kirk states these occur "in the vast majority of cases." Many of my patients were dead before necrosis or gangrene had any chance of occurring. One thing, however, was almost always pronounced, and this was sudden and violent vomiting either of clear or brownish fluid.

I do not think that foul breath in a Samoyede dog, eight years old, is clearly diagnostic of septic pneumonia at any time. It is far more likely to be occasioned by a foul mouth or offensive breath due to a bad condition of the stomach. The epizootic nature of canine typhus is of assistance in diagnosis, and *gastro-enteritis* and not *enteritis* only is one of the distinguishing features.

I am not concerned in deciding whether Mr. Duncan's case was one of distemper or Stuttgart disease, but merely to show that some of Captain Lancaster's statements have authority on their side, while some of Captain Kirk's appear to me too dogmatic.—Yours faithfully,

G. MAYALL, M.R.C.V.S.

Bolton, Dec. 26th, 1921.

### Madras Veterinary College M.A.

Sir,—The above medical association was started on 7th December, 1920, through the efforts of some of the enthusiastic students of the college. This association is unique in being the first of its kind in the veterinary institutions of this country. As all of us have not usually the time, opportunities and facilities for keeping in close touch with advancements in knowledge appertaining to our calling, this association will impress upon the student the fact that there is yet much to be known outside the limits of the particular branch of knowledge with which he is immediately concerned. An ardent desire to achieve something substantial, a buoyancy of spirit, a strong determination for strenuous toil, disinterestedness in work—these are the only assets to which we now presume to lay claim. But these can achieve little by themselves. Valuable suggestions, sincere co-operation and unstinted help, these we sanguinely hope to get from all interested.

A copy of our first report to the end of March, 1921, is sent herewith for your kind perusal.*

I beg to add that the President, Vice-President and other well-wishers of the association have proposed to award a diploma of fellowship of the association to all original thesis and a medal for the exceptionally good thesis for the year, and another medal for the best communication to the association, and it is hoped that this award of prizes will contribute not a little to rouse up the desire to improve the professional knowledge of the members of the association.—Thanking you in anticipation, I remain, sir, yours faithfully, R. S. NARAYAMAN, *Secretary*.

The Madras Veterinary College Medical Association, Vepery, Dec. 5th, 1921.

[*The foreword to the report to which reference is here made states that "the association was the fruit of efforts on the part of some of the students who realised the necessity of, and the advantages to be derived from, some way in which they could exercise their minds and obtain experience on professional subjects in addition to their ordinary work done in class. It is believed that the association is not only the youngest of its kind in India, but is also the oldest, as up to date the Lahore, Bengal and Bombay Veterinary Colleges are without a Students' Veterinary Medical Association. Our own association having thus a start, it behoves all students to support the efforts of their own College Association with the intention of reading some paper or joining in the discussion.

"This association has for its object the advancement of knowledge amongst its members of Veterinary Medicine and Surgery and all subjects connected therewith, by the reading of essays and by the holding of debates on the essays read."—ED.]

### Army Veterinary Service.

LONDON GAZETTE, WAR OFFICE, REGULAR FORCES.

December 30th—The following temporary Quartermasters and Captains relinquish their commissions on completion of service, and retain their rank:—W. J. Alderson (Nov. 23rd, 1919), E. E. S. Armstrong (May 20th, 1919).

TERRITORIAL FORCE.

December 30th—The King has been pleased to confer the Territorial Decoration upon the following Officers under the terms of the R. W. dated October 13th, 1920:—Major J. Adamson, M.C., attd. E. Lanc. Div.

Lieut. D. O'Kell relinquishes commission, retaining rank.

Capt. T. A. B. Cocksedge relinquishes his commission (Sept. 30th), under A.O. 166/1921, as amended by A.O. 332/1921, and retains rank of Capt.

## Royal College of Veterinary Surgeons.

*President*: Dr. O. Charnock Bradley, M.D., D.SC., CH.B., M.R.C.V.S.

*Vice-President*: Mr. F. W. Garnett, C.B.E., M.R.C.V.S., J.P.

*Secretary and Registrar*: Mr. Fred Bullock, 10 Red Lion Square, London, W.C. 1.

## NATIONAL VETERINARY MEDICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND, LTD.

*Pres.*: Dr. O. Charnock Bradley, Prin. R.V. Coll., Edin.
*Sec.*: Mr. J. Basil Buxton, F.R.C.V.S., 12 Buckingham Palace Road, London, S.W. 1.
*Assist. Sec.*: Mr. W. J. B. DeVine, F.R.C.V.S., M.C., Holliday Street Wharf, Birmingham.
*Treas.*: Prof. G. H. Wooldridge, F.R.C.V.S., Ryl. Vet. Coll., Camden Town, N.W.

### Northern Branch:

*Pres.*: Mr. W. A. Taylor (F), Brick Street, Manchester.
*Hon. Sec.*: Mr. A. W. Noel Pillers (F), 2 Galton Avenue, Wavertree, Liverpool.

DERBYSHIRE VETERINARY ASSOCIATION.

*Pres.*: Mr. T. H. L. Duckworth.
*Hon. Sec.*: Mr. E. Marrison, Bakewell, Derby.
*Meetings*, 2nd Tuesday in January, April, July and October.

LANCASHIRE V.M.A.

*Pres.*: Mr. A. W. Noel Pillers, F.R.C.V.S., 2 Galton Avenue, Wavertree, Liverpool.
*Hon. Sec.*: Mr. J. Spruell, M.R.C.V.S., City Abattoir, Manchester.
*Hon. Treas.*: Mr. E. H. Stent, M.R.C.V.S., Preston Street, Hulme.
*Meetings*, 1st Thursday in April, June, Sept., and Dec.
*Pathological Sec.*: Mr. D. C. Matheson, F.R.C.V.S.
*Meetings*, May, July, October, January.

MIDLAND COUNTIES V.M.A.

*Pres.*: Mr. H. S. Reynolds, Daventry.
*Hon. Sec.*: Mr. H. J. Dawes, F.R.C.V.S., Camden House, High Street, West Bromwich.
*Hon. Treas.*: Mr. W. H. Brooks, M.R.C.V.S., Stafford Road, Handsworth, Birmingham.
*Meetings*, Second Tuesday, Wednesday, Thursday, and Friday, alternately in Feb., May, Aug., and Nov.

NORTH OF ENGLAND V.M.A.

*Pres.*: Mr. Geo. Elphick, M.R.C.V.S., Corbidge-on-Tyne.
*Hon. Sec.*: Mr. T. T. Jack, M.R.C.V.S., 3 Elmwood Street, Sunderland.
*Meetings*, Third Friday, Feb., May, Aug., and Nov.

NORTH MIDLAND VETERINARY ASSOCIATION.

*Pres.*: Mr. T. Bowett, M.R.C.V.S., Worksop.
*Hon. Treas.*: Mr. H. Thompson, M.R.C.V.S., Sheffield.
*Hon. Sec.*: Mr. J. S. Lloyd, F.R.C.V.S., Sheffield.

NORTH WALES V.M.A.

*Pres.*: Mr. L. W. Wynn Lloyd, M.R.C.V.S., Carnarvon.
*Meetings*, First Tuesday, March and September.
*Hon. Sec.*: Mr. W. Hall Savage, Bangor.

YORKSHIRE VET. ASSOCIATION.

*Pres.*: Mr. G. C. Barber, Leeds.
*Hon. Sec.*: Mr. J. Clarkson, M.R.C.V.S., Garforth, nr. Leeds.
*Hon. Treas.*: Mr. A. McCarmick, M.R.C.V.S., Kirkstall Road, Leeds.

### Southern Branch.

*Pres.*: Sir Stewart Stockman, 4 Whitehall Place, S.W.
*Sec.*: Mr. G. P. Male (F), 50 Friar Street, Reading.

CENTRAL V.S.

*Pres.*: Mr. G. H. Livesey, Hove.
*Hon. Treas.*: Mr. E. L. Stroud.
*Hon. Sec.*: Mr. H. A. MacCormack, M.R.C.V.S., 122 St. George's Avenue, Tufnell Park, N.
*Hon. Treas.*: Mr. E. L. Stroud.
*Meetings*, First Thursday in the month, except August, 10 Red Lion Square, Holborn, at 7 p.m.

EASTERN COUNTIES V.M.A.

*Pres.*: Mr. M. Bray, M.R.C.V.S., Docking, Norfolk.
*Hon. Sec and Treas.*: Mr. W. Shipley, M.R.C.V.S., 28 South Town, Great Yarmouth.
*Meetings*, Second Tuesday, Feb., July, and Sept.

LINCOLNSHIRE AND DISTRICT V.M.S.

*Pres.*: Mr. Tom Hicks, M.R.C.V.S., Boston Road, Sleaford.
*Hon. Sec.*: Mr. W. Lang, Brigg, Lincs.
*Meetings*, Second Thursday, Feb., June, and Oct.

MID-WEST AND SOUTH WALES V.A.

*Pres.*: Mr. W. Scott, F.R.C.V.S., Bridgwater.
*Hon. Sec.*: Mr. J. J. Aveston, M.R.C.V.S., Bath.

ROYAL COUNTIES V.M.A.
*Pres.*: Mr. F. W. Willett, M.R.C.V.S., Staines.
*Hon. Sec.*: Mr. P. J. Simpson, D.S.O., F.R.C.V.S., Shirley, Castle Hill, Maidenhead.
*Hon. Treas.*: Mr. G. P. Male, M.R.C.V.S., Friar St., Reading.
*Meetings*, Last Friday, Jan., April, July, and Nov.

SOUTHERN COUNTIES V.S.
*Pres.*: Mr. J. W. McIntosh, London.
*Hon. Sec.*: Mr. J. T. Angwin, M.R.C.V.S., Arundel.
*Hon. Treas.*: Mr. E. W. Baker, M.R.C.V.S., Wimborne.
*Meetings*, Last Thursday, Mar., June, and Sept.

SOUTH EASTERN V.A.
*Pres.*: Mr. T. F. Hogben, M.R.C.V.S., Ash, Canterbury.
*Hon Sec. and Treas.*: Mr. H. P. Hogben, M.R.C.V.S., 3 Manor Road, Folkestone.

WESTERN COUNTIES V.M.A.
*Pres.*: Mr. W. Nelder, F.R.C.V.S., Exeter.
*Hon. Sec.*: Mr. W. P. Stableforth, F.R.C.V.S., Honiton.
*Hon. Treas.*: Mr. W. Ascott, M.R.C.V.S., Bideford.
*Meetings*, Third Thursday, March, July and November.

**Irish Branch.**

*Pres.*: Mr. A. Watson, Municipal Buildings, Dublin.
*Sec.*: Mr. P. D. Reavy, Leafield, Bundoran, Co. Donegal.

CENTRAL V.A. OF IRELAND.
*Pres.*: Mr. B. P. J. Mahony, M.R.C.V.S., Maryboro'.
*Hon. Sec.*:
*Treas.*: Mr. J. F. Healy, M.R.C.V.S., Midleton.

CONNAUGHT V.M.A.
*Pres.*: Mr. D. Hamilton, M.R.C.V.S., Ballina.
*Hon. Sec. and Treas.*: Mr. A. J. Moffett, M.R.C.V.S., Galway.

VET. MED. ASSN. OF IRELAND.
*res.*: Mr. W. H. Wilkinson, M.R.C.V.S., Dublin.
*Hon. Sec.*: Prof. J. J. O'Connor, M.R.C.V.S., R.V. Coll.
*Hon. Treas.*: Prof. T. G. Browne, M.R.C.V.S., R.V. Coll., Dublin.

NORTH OF IRELAND V.M.A.
*Pres.*: Mr. J. Ewing Johnston, M.R.C.V.S., Belfast.
*Hon. Sec.*,: Mr. Alex. Monro, F.R.C.V.S., Portal Inspection Office, Belfast.
*Hon. Treas.*: Mr. Howard McConnell, M.R.C.V.S., Armagh.

THE VETERINARY OFFICERS ASSOCIATION FOR IRELAND.
*Pres.*: Mr. F. W. Emery, F.R.C.V.S., Dublin.
*Hon. Sec.*: Mr. T. McGuinness, B.A., M.R.C.V.S., 36 Mount Charles, Belfast.
*Hon. Treas.*: Mr. Hannan, M.R.C.V.S.

**Scottish Branch.**

*Pres.*: Prin. S. H. Gaiger, F.R.C.V.S., Glasgow Vet. Coll.
*Hon. Sec.*: Mr. Geo. W. Weir, M.R.C.V.S., 41 Keir Street, Pollokshields.

NORTH OF SCOTLAND V.M.S.
*Pres.*: Mr. Hugh McVean, M.R.C.V.S., Craigellachie, Banffshire.
*Hon. Sec. and Treas.*: Mr. G. Howie, M.R.C.V.S., Alford, Aberdeen.
*Meetings*, Last Saturday in January and August.

SOUTH METROPOLITAN V.M.S.
*Pres.*: Mr. J. Henderson, 98 Gilmour Place, Edinburgh.
*Hon. Sec. and Treas.*: Prof. R. G. Linton, M.R.C.V.S., Royal (Dick) Veterinary College, Edinburgh.

WEST OF SCOTLAND V.M.A.
*Pres.*: Prin. S. H. Gaiger, F.R.C.V.S., Vety. Coll., Glasgow.
*Hon. Sec.*: Mr. Geo. W. Weir, M.R.C.V.S., 41 Keir Street, Pollokshields.
*Meetings*, Second Wednesday, May, Oct., and Jan.

DUMFRIES AND GALLOWAY V.M.A.
*Pres.*: Mr. James Lindsay, Dumfries.
*Hon. Sec.*: Mr. N. H. McAlister, 27 St. Mary Street, Kirkcudbright.

## Diseases of Animals Acts, 1894 to 1914. Summary of Returns.

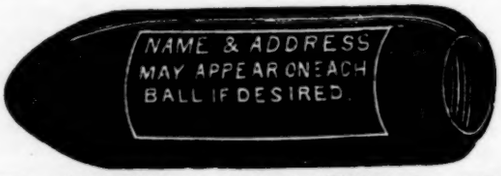
| Period. | Rabies. Cases Confirmed. Dogs. | Rabies. Cases Confirmed. Other Animals. | Anthrax. Outbreaks confirmed. | Anthrax. Animals attacked. | Foot-and-Mouth Disease. Outbreaks confirmed. | Foot-and-Mouth Disease. Animals slaught'd as diseased or exposed to infection. | Glanders (including Farcy).* Outbreaks reported by the Local Authorities. | Glanders (including Farcy).* Animals attacked. | Parasitic Mange. Outbreaks reported by the Local Authorities. | Parasitic Mange. Animals attacked. | Sheep Scab. Outbreaks reported by the Local Authorities. | Swine Fever. Outbreaks confirmed. | Swine Fever. Swine slaughtered as diseased or exposed to infection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GT. BRITAIN. | No. | No | No. | No. | No. | No. | No. | No | No. | No. | No. | No. | No. |
| Week ended 24th December, 1921 | ... | ... | 8 | 10 | ... | ... | ... | ... | 20 | 31 | 38 | 26 | 3 |
| Corresponding Week in 1920 | 1 | ... | 10 | 10 | 5 | 72 | ... | ... | 45 | 64 | 19 | 20 | 9 |
| Corresponding Week in 1919 | | ... | 6 | 8 | 3 | 73 | 1 | 1 | 98 | 163 | 23 | 37 | 16 |
| Corresponding Week in 1918 | 6 | ... | 5 | 5 | ... | ... | ... | ... | 119 | 297 | 5 | 24 | 12 |
| Total for 52 weeks, 1921 ... | 22 | 1 | 505 | 639 | 44 | 3085 | 11 | 42 | 2000 | 3023 | 671 | 1263 | 450 |
| Corresponding period in 1920 | 41 | ... | 459 | 547 | 93 | 11373 | 15 | 25 | 3564 | 5812 | 479 | 1816 | 715 |
| Corresponding period in 1919 | 150 | 5 | 234 | 313 | 75 | 3437 | 25 | 61 | 5003 | 9773 | 438 | 2305 | 1039 |
| Corresponding period in 1918 | 98 | 10 | 245 | 282 | 3 | 40 | 34 | 98 | 4483 | 8422 | 352 | 1407 | 562 |

NOTE. The figures for the current year are approximate only. *Excluding outbreaks in Army horses.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IRELAND. | | | | | | | | | Outbreaks | | | |
| Week ended 24th December, 1921 | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 2 | 8 | |
| Corresponding Week in 1920 ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 18 | ... | ... |
| Corresponding Week in 1919 ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 4 | 1 | 4 |
| Corresponding Week in 1918 ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 18 | 4 | 8 |
| Total for 52 weeks, 1921 ... ... ... | 1 | 1 | 7 | 77 | ... | ... | ... | ... | 77 | 278 | 119 | 154 |
| Corresponding period in 1920 ... | 1 | 1 | ... | ... | 1 | 3 | 95 | 358 | 15 | 45 | | |
| Corresponding period in 1919 ... | ... | ... | ... | ... | 1 | 1 | 140 | 298 | 34 | 106 | | |
| Corresponding period in 1918 ... | 2 | 2 | ... | ... | ... | ... | 98 | 352 | 36 | 138 | | |

NOTE.—The figures for the current year are approximate only.

# WYLEYS HORSE BALLS.

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| No. | per doz. | per gro. | No. | per doz. | per gro. | No. | per doz. | per gro. |
|---|---|---|---|---|---|---|---|---|
| 4—Alterative Balls ... | 3/- | 32/- | 8—Diuretic Balls ... | 3/- | 32/- | 25—Stimulating Balls (2 drs.) ... | 3/- | 32/- |
| 5—Astringent Balls ... | 3/- | 32/- | 9—Fever Balls ... | 3/6 | 40/- | 26—Stimulating Balls (3 drs.) ... | 3/- | 32/- |
| 12—Condition Balls ... | 3/- | 32/- | 27—Grease Balls ... | 3/- | 32/- | 28—Stomachic Balls ... | 3/- | 32/- |
| 23—Condition Balls ... | 3/- | 32/- | 1—Physic Balls (4 drs.) | 3/- | 32/- | 10—Tonic Balls ... | 3/- | 32/- |
| 6—Cordial Balls .. | 3/- | 32/- | 2—Physic Balls (5 drs.) | 3/- | 32/- | 11—Tonic Balls ... | 3/- | 32/- |
| 7—Cough Balls ... | 3/- | 32/- | 3—Physic Balls (6 drs.) | 3/6 | 38/- | 20—Tonic Balls (Quinine) | 4/- | 44/- |
| 16—Cough Balls ... | 3/6 | 40/- | 18—Physic Balls (7 drs.) | 4/- | 44/- | 13—Worm Balls ... | 3/6 | 40/- |
| 17—Cough Balls ... | 3/6 | 40/- | 19—Physic Balls (8 drs.) | 4/- | 44/- | 14—Worm Balls ... | 4/6 | 48/- |
| 21—Cough Balls (Chlorodyne) ... | 3/6 | 40/- | 15—Stimulating Balls | 3/- | 32/- | | | |
| | | | 24—Stimulating Balls | 3/- | 32/- | | | |

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